

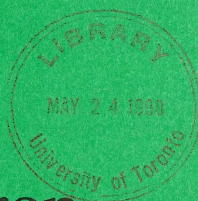
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Publications

PUBLICATION 296 SUPP.

# 1990 Supplement

to



## Field Crop Recommendations 1989-1990 Edition



Ontario

Ministry of  
Agriculture  
and Food

David Ramsay, Minister



To the best of the collective knowledge of the members of the Ontario Crop Protection Committee, all pesticides listed in this publication were federally registered, reviewed by the Ontario Pesticides Advisory Committee and classified by the Ministry of the Environment as of November 8, 1989.

The information presented on the pesticide container label regarding application rates and methods of application are the final authority and where conflicts occur between this publication and the container label, the latter applies.

**PAY CLOSE ATTENTION TO ALL INSTRUCTIONS AND WARNINGS PRINTED ON THE PESTICIDE LABEL.**

The Ministry of Agriculture and Food, or the Ontario Crop Protection Committee by printing this publication does not offer any warranty or guarantee and they do not assume any liability for any crop loss, animal loss, health, safety or environmental hazard caused by the use of a pesticide mentioned in this publication.

### **POLICY STATEMENT**

In this publication, most recommendations list several pesticides that are effective for each insect or disease discussed. Where possible, the less hazardous materials and those that growers have used satisfactorily for a number of years are listed first. These are followed by the more toxic pesticides and/or newer ones with which we have less experience. It must be emphasized that, in some cases, the most effective pesticides are highly toxic.

Weather and other factors influence the effectiveness of pesticides and the likelihood of plant injury by control chemicals. Consult the package label and other information regarding compatibility with other materials, the effect of high or low temperatures, poor drying conditions, etc. Wettable or soluble powders (WP or SP) generally are less likely to cause plant injury than liquid concentrates (EC, SC, and F).

A number of brand names of pesticides are given in the calendars as a convenience to the grower and are neither an endorsement of the product nor a suggestion that similar products are not effective. The pesticide recommendations are reviewed annually by the Ontario Crop Protection Committee. Health and Welfare Canada has established maximum residue limits (MRL's) for pesticides. However, growers should be aware that processors or retailers may demand different pesticide limits.

For additional information or clarification of recommendations, contact Ontario Ministry of Agriculture and Food personnel listed on pages 84-85 of Publication 296, *1989-1990 Field Crop Recommendations*. Growers should seek advice of their intended market as to which restrictions or limitations are applicable.

### **FEDERAL REGISTRATION AND PROVINCIAL CLASSIFICATION**

Ontario's Pesticides Act and Regulations 751, administered by the Ministry of the Environment, prohibits the sale and use of pesticide products unless they are registered under the federal Pest Control Products Act and classified under the provincial Pesticides Act by being placed in one of six schedules of the Ontario regulation.

#### **FEDERAL REGISTRATION**

There are three categories:

##### **1. Full Registration**

Implies that all federal departments involved in the registration process agree that the package was acceptable at the time of registration.

##### **2. Temporary Registration**

Indicates that there is a need for additional scientific or technical information to acquire a full registration. Temporary registrations expire on the 31st of December each year and the products must be re-registered if they are to be available for use in the following year.

##### **3. Temporary Registration (Restricted Class)**

Indicates that there is an urgent need for the pesticide but that studies on the safety of the product are incomplete. Such registrations expire on the 31st of December each year and the products must be re-registered if they are to be available for use the following year. The pesticide product presently carrying temporary registration (restricted class) and included in this publication is Bayleton (triadimefon). This material may, or may not, be available for use in 1990.

#### **PROVINCIAL CLASSIFICATION**

Pesticide products are classified into six schedules in Regulation 751 on the basis of their toxicity, environmental or health hazard, persistence of the active ingredient or its metabolites, concentration and usage. This classification system provides the basis for regulating the distribution, availability and use of pesticide products in Ontario.

For updated information on the regulatory status of these or other pesticides, contact the Pesticides Section, Hazardous Contaminants Coordination Branch, Ministry of the Environment, Toronto, Telephone 416-323-5095.

This supplement complements Publication 296, *1989-1990 Field Crop Recommendations*, but does not replace it. A limited number of copies of that publication are available from your local OMAF office.

This supplement contains those tables on varieties and pesticides that have changes from the 1989-1990 edition of Publication 296. The revised tables are numbered to correspond with the original tables.

Publication 296 will be revised and published for 1991-1992.

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# CORN

## Hybrid Selection

Information on hybrid corn performance is published in the OMAF Publication, *1990 Ontario Hybrid Corn Performance Trials Report*, available by January each year.

## PESTICIDES FOR INSECT CONTROL IN CORN

Table 17. Corn Rootworm Control

Insecticide	Placement <sup>1</sup>	Rate of Product		
		Grams per 100m of any row width	kg/ha at Row Width of	
			90cm	75cm
Counter 15G <sup>2</sup>	Band	75	8.3	10.0
Thimet 15G	Band	75	8.3	10.0
Dyfonate 20G <sup>3</sup>	Band	55	6.1	7.3
Counter 15G <sup>2</sup>	In furrow	75	8.3	10.0
Lorsban 15G	Band	75	8.3	10.0
Cygard 15G	Band	75	8.3	10.0
Di-Syston 15G	Band	75	8.3	10.0
720 LC <sup>4</sup>	Band	15 mL	1.6 L/ha	2.0 L/ha
Furadan 10G	Band	110	12.2	14.6

G (Granular); LC (Liquid concentrate)

*Under heavy insect pressures the products divide into three groups of effectiveness. Within groups, products are equally effective and are listed by date of registration.*

<sup>1</sup> Band application - place material in a 15 cm. band ahead of the press wheel. In furrow application - place all material directly in the open seed furrow, behind the planter shoe.

<sup>2</sup> Also controls seed corn maggot and wireworms.

<sup>3</sup> Also controls seed corn maggot.

<sup>4</sup> Liquid concentrate must be applied in a 15 cm. band for control. Do not apply with liquid starter fertilizer because the band is not wide enough for control of rootworms.

Table 18. European Corn Borer Control

Insecticide	Product per ha
Cymbush 250 EC	280 mL
Ripcord 400 EC	175 mL
*Furadan 480 F	1.1 L
Sevin XLR PLUS 480 Su <sup>1</sup>	2.5-4.0 L
Bactospiene <sup>2</sup>	2.6 L for seed corn only

EC (Emulsifiable Concentrate); F (Flowable); Su (Suspension).

\*Minimum period before reentry is 48 hours.



<sup>1</sup>Several formulations of Sevin are available for use according to label instructions. Sevin XLR PLUS is recommended because it is less hazardous to bees foraging for corn pollen. Follow precautions applying to honeybees.

<sup>2</sup>Bactospiene is a biological insecticide containing an insect toxin produced by the bacterium *Bacillus thuringiensis*. For effective control applications must be timed for newly hatched larvae. Delayed timing results in poor control. Good leaf coverage is essential to achieve effective control.

**Table 19. Cutworm Control<sup>1</sup>**

Insecticide	Product per ha
Ambush 500 EC <sup>2</sup>	225-300 mL
Lorsban 4 E	2.4 L
Ripcord 400 EC	175 mL

*E or EC (Emulsifiable Concentrate)*

<sup>1</sup>Seedling stage only.

<sup>2</sup>Read the label. Do not disturb the soil for 5 days after application.

## SOYBEANS

### Variety Selection

Information on soybean variety performance is published in the OMAF Publication, *1990 Report, Ontario Soybean Variety Trials*, available in January each year.

## FORAGE CROPS

### Variety Selection

**Table 28. Recommended Alfalfa Varieties**

Variety	Yield (% of Saranac)		Disease Reaction <sup>2</sup>		Bacterial Wilt	Distributor <sup>1</sup>
	S. Ontario	N. Ontario	Verticillium Wilt	Phytophthora Root Rot		
Admiral	101	95	R	R	R	First Line Seeds
Advance	104	-	R	S	R	Pickseed
Algonquin	96	102	S	S	HR	Public
Alouette	99	103	S	S	R	Pickseed
Ambassador	104	100	R	R	R	Mapleseed Inc., Pride Brand Seeds
Anchor	99	100	S	S	R	Oseco Inc.
Angus	98	101	S	S	HR	Public
Apica	104	104	S	S	R	United Cooperatives of Ontario
Apollo II	99	95	MR	HR	R	Oseco Inc.
Armor	102	99	S	R	R	Oseco Inc.
Arrow	104	104	R	HR	HR	Pickseed
Award	101	-	S	S	R	Speare Seeds
Bell Ringer	104	-	MR	S	R	King Agro
Centurion	101	100	R	R	HR	United Cooperatives of Ontario
Champion	102	-	MR	MR	R	Parsons Seeds
Chief	103	-	R	HR	HR	Jacques Canada
Citation	102	104	S	S	R	Mapleseed Inc.
Comsel	99	-	S	HR	R	Norcan Seeds, Speare Seeds

(continued on page 4)

**Table 28. Recommended Alfalfa Varieties (cont.)**

Variety	Yield (% of Saranac)		Disease Reaction <sup>2</sup>			Distributor <sup>1</sup>
	S. Ontario	N. Ontario	Verticillium Wilt	Phytophthora Root Rot	Bacterial Wilt	
Crown	102	102	R	R	R	Cargill Hybrid Seeds
Crusader	100	102	MR	R	HR	Pride Brand Seeds
120	104	104	S	R	HR	Dekalb Canada
DK 125	103	102	R	R	HR	Dekalb Canada
DK 135	102	97	MR	MR	MR	Dekalb Canada
Eagle	100	97	MR	MR	HR	Cargill Hybrid Seeds
Edge	102	103	R	R	R	First Line Seeds
Excalibur	103	103	R	S	R	United Cooperatives of Ontario
Glory	101	101	S	S	R	Speare Seeds
G2852	104	-	R	R	HR	Funk Seeds
Horizon	104	-	HR	HR	HR	Pride Brand Seeds
Hunter	99	99	S	S	R	Rothwell Seeds
Husky	103	103	S	MR	R	Oseco Inc.
Iroquois	99	100	S	S	HR	Public
Magnum	100	101	S	S	HR	Funk Seeds
Magnum +	101	102	S	R	R	Funk Seeds
88	102	99	R	MR	R	Mapleseed Inc.
Mohawk	98	98	S	S	HR	Rothwell Seeds, United Cooperatives of Ontario
Noble	101	-	S	S	R	United Cooperatives of Ontario
OAC Minto	102	103	S	S	R	Speare Seeds, Bishop Seeds
Olinda	100	-	S	HR	R	SeCan member
Oneida VR	101	-	HR	R	R	Pickseed
Peak	101	101	S	MR	R	Oseco Inc.
Pinnacle	101	101	R	MR	HR	Hyland Seeds
526	103	100	S	S	HR	Pioneer Hi-Bred
532	103	101	S	S	HR	Pioneer Hi-Bred
5432	100	101	R	MR	HR	Pioneer Hi-Bred
Preserve	103	100	S	MR	R	Northrup King Seeds
Primal	102	100	S	S	HR	Pride Brand Seeds
Regal	101	94	S	MR	HR	United Cooperatives of Ontario
Saranac	100	100	S	S	R	Public
Shield	101	97	R	R	HR	Rothwell Seeds
Spectrum	101	98	S	MR	R	Labonte Seeds, Hyland Seeds
Sure	103	102	R	R	HR	Northrup King Seeds
Surpass	103	109	R	R	HR	Oseco Inc.
Thor	100	100	S	S	HR	Northrup King Seeds
Thunder	100	95	S	R	R	Oseco Inc.
Tomahawk	103	-	MR	MR	R	Speare Seeds
Trumpetor	98	98	MR	S	MR	Northrup King Seeds
Turbo	101	99	S	R	R	Pickseed
Ultra	103	-	R	R	R	Hyland Seeds
Valor	99	98	S	S	R	Rothwell Seeds
Verta +	104	102	R	R	HR	Speare Seeds
Vista	99	99	S	S	R	Pickseed, Mapleseed Inc.
WL 222	100	100	S	MR	R	King Agro, Speare Seeds
WL 316	101	96	R	MR	MR	King Agro, Speare Seeds

*Average yield of Saranac in Southern Ontario trials 10.7 t/ha; in Northern Ontario trials 8.5 t/ha.*

<sup>1</sup> See Distributor Addresses in General Information section.

<sup>2</sup> HR = Highly Resistant (more than 50% resistant plants).

R = Resistant (31 to 50% resistant plants).

MR = Moderately resistant (15 to 30% resistant plants).

S = Susceptible (less than 15% resistant plants).

**Table 30. Recommended Bird's-foot Trefoil Varieties**

Variety	Yield (% of Leo)		First Flower		Regrowth	Variable Drainage Tolerance	Distributor <sup>1</sup>
	S. Ontario	N. Ontario	(Guelph)	(Kapuskasing)			
Leo	100	100	June 23	June 30	Medium to Slow	Good	Public Variety
Upstart	102	97	June 23	June 30	Medium to Slow	Good	Pickseed
Empire	98	97	July 1	July 7	Slow	Excellent	Public Variety

<sup>1</sup> See Distributor Addresses in General Information section.

Average yield of Leo in Southern Ontario trials 8.5 t/ha; in Northern Ontario trials 5.7 t/ha.

**Table 31. Recommended Double-Cut Red Clover Varieties**

Variety	Yield ( as % of Florex)				First Flower		Distributor <sup>1</sup>
	Southern Ontario		Northern Ontario		(Guelph)	(Kapusking)	
	Year 1	Year 2	Year 1	Year 2			
Arlington	99	92	92	91	June 15	June 29	Public Variety
Atlas	103	97	100	-	June 16	June 30	Northrup King Seeds
Florex	100	100	100	100	June 18	July 2	Northrup King Seeds Mapleseed Inc.
Prosper 1	101	94	98	99	June 18	July 2	King Agro
Persist	102	98	107	-	June 19	July 3	Northrup King Seeds
Walter	104	-	102	-	June 17	July 1	Mapleseed Inc.

<sup>1</sup> See Distributor Addresses in General Information section.

Average yield of Florex, Southern Ontario trials 9.6 t/ha; in Northern Ontario trials 6.5 t/ha.

**Table 32. Recommended White Clover Varieties**

Variety	Yield (% of Sacramento)		Distributor <sup>1</sup>
	S. Ontario	N. Ontario	
California Ladino	105	103	Public Variety
Canopy	106	104	Most Distributors
Merit	107	-	Public Variety
Sacramento	100	100	Tib Szego Associates Ltd.

<sup>1</sup> See Distributor Addresses in General Information section.

Average yield of Sacramento, Southern Ontario trials 6.2 t/ha; in Northern Ontario trials 4.5 t/ha.

**Table 33. Recommended Timothy Varieties**

Variety	Yield (% of Climax)		Heading Date		Regrowth	Distributor <sup>1</sup>
	S. Ontario	N. Ontario	(Guelph)	(Kapuskasing)		
Salvo	92	98	June 16	June 22	Good	SeCan Member
Toro	91	100	June 20	July 3	Good	Oseco Inc.
Basho	95	104	June 22	July 2	Good	Public
Richmond	99	101	June 22	July 2	Fair	Mapleseed Inc., Pickseed

(continued on page 6)



**Table 33. Recommended Timothy Varieties (cont.)**

Variety	Yield (% of Climax)		Heading Date		Regrowth	Distributor <sup>1</sup>
	S. Ontario	N. Ontario	(Guelph)	(Kapuskasing)		
Champ	99	108	June 23	July 1	Good	Public
Mariposa	101	98	June 24	July 2	Good	United Co-operatives of Ontario
Nike	101	101	June 24	July 1	Fair	Pickseed
Itasca	101	101	June 25	July 3	Fair	United Co-operatives of Ontario
Alexander	100	99	June 26	July 4	Fair	Speare Seeds
Argus	104	104	June 26	July 4	Fair	Oseco Inc.
Timfor	100	102	June 26	July 3	Fair	Northrup King Seeds
Climax	100	100	June 28	July 5	Fair	Public
Glenmor	100	-	June 28	July 3	Good	Northrup King Seeds
Winmor	102	96	June 29	July 6	Fair	Northrup King Seeds

<sup>1</sup> See Distributor Addresses in General Information section.

Average yield of Climax, Southern Ontario trials 10.3 t/ha; in Northern Ontario trials 7.9 t/ha.

**Table 34. Recommended Bromegrass Varieties**

Variety	Yield (% of Baylor)		Heading Date		Distributor <sup>1</sup>
	S. Ontario	N. Ontario	(Guelph)	(Kapuskasing)	
Baylor	100	100	June 10	June 26	Oseco Inc.
Beacon	98	103	June 10	June 25	Oseco Inc., United Co-operatives of Ontario
Bravo	97	103	June 10	June 25	Pickseed
Saratoga	95	100	June 10	June 24	Public
Tempo	93	100	June 10	June 24	Pickseed, Mapleseed Inc.

<sup>1</sup> See Distributor Addresses in General Information section.

Average yield of Baylor, Southern Ontario trials 10.4 t/ha; in Northern Ontario trials 7.5 t/ha.

**Table 35. Recommended Orchardgrass Varieties**

Variety	Yield (% of Hallmark)		Heading Date		Distributor <sup>1</sup>
	S. Ontario	N. Ontario	(Guelph)	(Kapuskasing)	
Hallmark	100	100	June 2	June 15	United Co-operatives of Ontario
Juno	99	103	June 2	June 15	Mapleseed Inc., Pickseed
Rapido	101	100	June 4	June 16	Pickseed
Napier	101	102	June 8	June 16	Oseco Inc.
Rancho	97	107	June 10	June 16	United Co-operatives of Ontario
Sumas	103	104	June 12	June 18	Oseco Inc.
Kay	101	109	June 12	June 18	Oseco Inc.

<sup>1</sup> See Distributor Addresses in General Information section.

Average yield of Hallmark, Southern Ontario trials 9.5 t/ha; in Northern Ontario trials 6.2 t/ha.

**Table 36. Recommended Reed Canarygrass Varieties**

Variety	Yield (% of Vantage)		Heading Date		Distributor <sup>1</sup>
	S. Ontario	N. Ontario	(Guelph)	(Kapuskasing)	
Vantage	100	100	June 10	June 24	Pickseed, Mapleseed Inc.
Venture	102	90	June 11	June 24	Speare Seeds
Palaton	99	94	June 11	June 25	Oseco Inc.

<sup>1</sup> See Distributor Addresses in General Information section.

Average yield of Vantage, Southern Ontario trials 11.8 t/ha; in Northern Ontario trials 8.5 t/ha.



**Table 37. Recommended Meadow Foxtail Varieties**

Variety	Yield (% of Mountain)		Heading Date		Distributor <sup>1</sup>
	S. Ontario	N. Ontario	(Guelph)	(Kapuskasing)	
Dan	98	100	May 15	May 30	Oseco Inc.
Mountain	100	100	May 12	May 27	Pickseed

<sup>1</sup>See Distributor Addresses in General Information Section.

Average yield of Mountain Southern Ontario trials 9.2 t/ha; in Northern Ontario trials 5.3 t/ha.

## PESTICIDES FOR INSECT CONTROL IN FORAGE CROPS

**Table 46. Alfalfa Weevil Control**

Insecticide	Product per ha	Days to Cutting or Grazing
*Furadan 480F	285 mL	7
Imidan 50 WP	2.2 kg	7
Malathion 500 EC <sup>1</sup>	2-2.75 L	7

EC (Emulsifiable Concentrate); F (Flowable);

WP (Wettable Powder)

\*Minimum period before reentry into treated areas is 48 hours.

<sup>1</sup>Less effective below 20 °C.

Follow precautions applying to honeybees.

**Table 47. Leafhopper Control**

Insecticide <sup>1</sup>	Product per ha	Days to Harvest
Cygon 480 E	425 mL	2
*Guthion 240 SC	2.25-3.5 L	21

E (Emulsifiable Concentrate); SC (Sprayable Concentrate).

\*Minimum period before reentry into treated areas is 48 hours.

<sup>1</sup>Follow precautions applying to honeybees.

**Table 48. Grasshopper Control**

Insecticide	Product per ha	Days to Harvest
Basudin 50 W	1.1 kg	14
Malathion 500 EC <sup>1</sup>	2-2.75 L	7
*Guthion 240 SC	1.4 L	21

EC (Emulsifiable Concentrate); SC (Sprayable Concentrate);

\*Minimum period before reentry into treated areas is 48 hours.

<sup>1</sup>Less effective below 20 °C.

Follow precautions applying to honeybees.

# CEREAL CROPS

Table 50. Recommended Barley Varieties

Variety	Area Recommended	Type	Kernel weight (g/1000 seeds)	Height <sup>1</sup> (cm)	Lodging <sup>2</sup>	Maturity <sup>3</sup>	Diseases <sup>4</sup>				
							Leaf Rust	Loose Smut	Scald	Spot Blotch	Mildew
2-Rowed											
Albany	All	Rough-awned	43	70	2	92	5	3	8	8	1
Birka <sup>5</sup>	All except V & VI	Rough-awned	42	71	2	93	3	3	5	8	0
Craig	All	Rough-awned	40	70	3	91	5	3	5	8	0
Helena	All except V & VI	Rough-awned	43	70	2	91	5	3	8	8	1
Micmac	All except V & VI	Rough-awned	41	76	4	91	5	8	8	8	1
Rodeo	All	Rough-awned	42	75	2	92	5	3	8	8	0
6-Rowed											
Chapais	All	Rough-awned	43	72	2	91	7	5	5	8	2
Etienne	All	Smooth-awned	39	79	2	92	8	2	5	8	8
Joly	All except I	Smooth-awned	37	81	4	90	8	5	5	8	2
Leger	All	Smooth-awned	37	86	3	91	8	1	5	8	7
Maskot	All	Rough-awned	39	83	2	92	8	2	5	8	2
Mingo <sup>5</sup>	All except IV, VI	Smooth-awned	39	86	4	91	8	5	5	8	8
OAC Kippen	All	Rough-awned	38	84	3	91	5	6	5	5	0
Sabina	All	Rough-awned	40	82	2	92	7	2	5	8	1

<sup>1</sup>In general, plants will be taller in the south and shorter in the north.

<sup>2</sup>Scale of 0-9, where 0 = standing and 9 = flat.

<sup>3</sup>Days to harvest. Subtract 5 days for areas I-IV and add 10 days for area VI.

<sup>4</sup>See Disease and Insect Control in Cereal Crops. Scale of 0-9, where 0 = very resistant and 9 = very susceptible.

<sup>5</sup>May be removed from the recommended list in 1991.



**Table 51. Relative Barley Yields<sup>1,2</sup>**

Variety	Test Areas					
	I	II	III	IV	V	VI
	..... % .....					
<b>2-Rowed</b>						
Albany	106	103	104	109	94	98
Birka	97	101	95	109	94	81
Craig	92	102	98	106	101	97
Helena	104	98	102	103	92	91
Micmac	98	99	99	108	100	98
Rodeo	107	100	98	107	97	100
<b>6-Rowed</b>						
Chapais	103	103	97	105	101	103
Etienne	100	101	89	90	101	104
Joly	104	92	104	86	103	111
Leger	101	103	111	97	101	112
Maskot	96	98	100	93	99	108
Mingo	100	96	100	87	99	102
OAC Kippen	93	102	99	102	103	92
Sabina	100	101	105	97	117	105
Average yield <sup>3</sup> (t/ha)	3.7	3.7	4.0	3.9	4.4	5.2

<sup>1</sup>Expressed as a percentage of the average yield of listed varieties in each area.

<sup>2</sup>Two year average (1988-89).

<sup>3</sup>1 t/ha = 893 lb/ac.

**Table 53. Relative Oat Yields<sup>1,2</sup>**

Variety	Test Areas					
	I	II	III	IV	V	VI
	..... % .....					
Baldwin	84	104	107	103	110	111
Donald	111	96	94	88	82	95
Dumont	76	88	94	93	87	93
Marion	123	106	106	108	122	104
Newman	116	104	102	113	98	105
OAC Woodstock	72	94	96	103	102	99
Ogle	123	113	103	101	97	95
Oxford	95	97	97	93	102	98
Average yield <sup>3</sup> (t/ha)	3.1	3.1	3.8	3.6	4.2	4.3

<sup>1</sup>Expressed as a percentage of the average yield of listed varieties in each area.

<sup>2</sup>Two year average (1988-89).

<sup>3</sup>1 t/ha = 893 lb/ac.

Table 52. Recommended Oat Varieties

Variety	Area Recommended	Type	Kernel weight (g/1000 seeds)	Height <sup>1</sup> (cm)	Lodging <sup>2</sup>	Maturity <sup>3</sup>	Diseases <sup>4</sup>			
							Leaf Rust	Barley Yellow Dwarf	Septoria	Smut
Baldwin <sup>5</sup>	All	white	33	102	4	96	8	8	8	5
Donald	All	white	34	92	3	95	8	5	8	1
Dumont <sup>5</sup>	III, V, VI	white	32	91	5	98	1	8	8	1
Marion	All	white	36	98	3	95	8	8	8	5
Newman	All	white	37	91	3	95	1	5	8	1
OAC Woodstock <sup>5</sup>	All	white	32	96	3	97	7	8	5	1
Ogle	All	yellow	31	82	1	93	5	3	3	5
Oxford <sup>5</sup>	All	yellow	30	92	2	98	5	5	3	1

Values are given to indicate relative differences between varieties; actual values will differ depending on growing conditions and disease pressures.

<sup>1</sup>In general, plants will be taller in the south and shorter in the north.

<sup>2</sup>Scale of 0-9, where 0 = standing and 9 = flat.

<sup>3</sup>Days to harvest. Subtract 5 days for areas I-IV and add 10 days for area VI.

<sup>4</sup>See Disease and Insect Control in Cereal Crops. Scale of 0-9, where 0 = very resistant and 9 = very susceptible.

<sup>5</sup>May be removed from the recommended list in 1991.



Table 54. Recommended Soft White Winter Wheat Varieties

Variety	Area Recommended	Kernel Weight	Awns	Height (cm)	Sprouting Resistance	Lodging <sup>1</sup>	Diseases		
							Leaf Rust <sup>2</sup>	Scab <sup>3</sup>	Mildew <sup>2</sup>
Augusta	I, II, III	36	-	99	Medium	2.5	4.1	4.6	3.5
Ena	I	35	+	99	Medium	1.9	3.6	1.7	2.9
Frankenmuth <sup>6</sup>	I <sup>4</sup> , II <sup>4</sup>	35	-	98	Medium	2.7	4.4	3.9	2.8
Fredrick <sup>6</sup>	I <sup>4</sup>	37	-	104	Medium to good	2.0	3.1	2.5	3.0
Harus	I, II	37	-	94	Medium to good	1.7	4.4	2.4	2.6
Houser	III <sup>5</sup>	38	+	92	Poor	2.9	4.3	3.2	2.5

Winter survival is similar for all varieties.

All varieties should be seed treated to control loose smut.

Values are given to indicate relative differences between varieties; actual values will differ depending on growing conditions and disease pressure.

<sup>1</sup>Scale of 0 - 9, where 0 = standing and 9 = flat.

<sup>2</sup>Scale of 0 - 9, where 0 = very resistant and 9 = very susceptible.

<sup>3</sup>Number of plants infected per 1000.

<sup>4</sup>Only where test weight is a problem with other varieties.

<sup>5</sup>Not on light, droughty soils and other locations where test weight is a problem.

<sup>6</sup>May be removed from the recommended list in 1991.

Table 55. White Winter Wheat Relative Yields<sup>1, 2</sup>

Variety	Test Areas		
	I	II	III
	..... % .....		
Augusta	100	100	109
Ena	100	95	91
Frankenmuth	98	100	100
Fredrick	95	95	98
Harus	105	102	98
Houser	98	100	106
Average Yield <sup>3</sup> (t/ha)	4.3	4.4	4.7

<sup>1</sup>Expressed as a percentage of the average yield of listed varieties in each area.

<sup>2</sup>Four year average (1986-1989).

<sup>3</sup>1 t/ha = 893 lb/ac.

**Table 56. White Winter Wheat Relative Test Weights<sup>1,2</sup>**

Variety	Test Areas		
	I	II	III
	..... % .....		
Augusta	97	98	98
Ena	100	102	101
Frankenmuth	101	101	101
Fredrick	103	101	102
Harus	102	101	100
Houser	97	97	97
Average test weight <sup>3</sup> (kg/hL)	73	74	80

<sup>1</sup>Expressed as a percentage of the average test weight of listed varieties in each area.

<sup>2</sup>Four year average (1986-1989).

<sup>3</sup>kg/hL x .801 = lb/bu.

**New Table. Recommended Hard Red Winter Wheat Varieties**

Variety	Area Recommended	Kernel Weight	Height (cm)	Sprouting Resistance	Lodging <sup>1</sup>	Diseases	
						Leaf Rust <sup>2</sup>	Mildew <sup>2</sup>
Absolvent	I, II, III	41	87	Very good	2.7	2.4	4.3
Karat	I, II, III	39	99	Very good	1.6	3.1	1.6

Winter survival is similar for all varieties.

All varieties should be seed treated to control loose smut.

Values are given to indicate relative differences between varieties; actual values will differ depending on growing conditions and disease pressure.

<sup>1</sup>Scale of 0 - 9, where 0 = standing and 9 = flat.

<sup>2</sup>Scale of 0 - 9, where 0 = very resistant and 9 = very susceptible.

**New Table. Hard Red Winter Wheat Relative Yields<sup>1,2</sup>**

Variety	Test Areas		
	I	II	III
Absolvent	98	101	95
Karat	102	99	105
Average Yield <sup>3</sup> (t/ha)	3.7	3.7	4.2

<sup>1</sup>Expressed as a percentage of the average yield of listed varieties in each area.

<sup>2</sup>Four year average (1986-1989).

<sup>3</sup>1 t/ha = 893 lb/ac.



**New Table. Hard Red Winter Wheat Relative Test Weights<sup>1,2</sup>**

Variety	Test Areas		
	I	II	III
Absolvent	101	101	100
Karat	99	99	100
Average test weight <sup>3</sup> (kg/hL)	74.5	75.7	83.3

<sup>1</sup>Expressed as a percentage of the average test weights of listed varieties in each area.

<sup>2</sup>Four year average (1986-1989).

<sup>3</sup>kg/hL x .801 = lb/bu.

**Table 57. Distributors for Cereal Grain Varieties**

	Variety	Distributor <sup>1</sup>	Breeder
Barley	Albany	SeCan Members	Charlottetown Res. Station
	Birka	W.G. Thompson & Sons Ltd.	Weibull's, Sweden
	Chapais	SeCan Members	Ste. Foy Research Station
	Craig	W.G. Thompson & Sons Ltd.	W.G. Thompson & Sons Ltd.
	Etienne	W.G. Thompson & Sons Ltd.	W.G. Thompson & Sons Ltd.
	Helena	King Agro	Dr. J. Ackerman, Germany
	Joly	King Agro	Semico, St. Hyacinthe
	Leger	SeCan Members	Plant Res. Centre, Ottawa
	Maskot	W.G. Thompson & Sons Ltd.	Semico, St. Hyacinthe
	Micmac	SeCan Members	Charlottetown Res. Station
	Mingo	W.G. Thompson & Sons Ltd.	Ciba-Geigy, Ailsa Craig
	OAC Kippen	SeCan Members	OAC, Guelph
	Rodeo	W.G. Thompson & Sons Ltd.	Ciba-Geigy, Ailsa Craig
	Sabina	King Agro	Semico, St. Hyacinthe
Oats	Baldwin	SeCan Members	Macdonald College
	Donald	SeCan Members	Plant Res. Centre, Ottawa
	Dumont	SeCan Members	Winnipeg Res. Station
	Marion	SeCan Members	Ste. Foy Research Station
	Newman	SeCan Members	Plant Res. Centre, Ottawa
	OAC Woodstock	SeCan Members	OAC, Guelph
	Ogle	Public	U. of Illinois
	Oxford	W.G. Thompson & Sons Ltd.	OAC, Guelph
	Tibor	W.G. Thompson & Sons Ltd.	Plant Res. Centre, Ottawa
Spring Triticale	OAC Triwell	King Agro	OAC, Guelph
Spring Wheat Feed Milling	Glenlea	Public	Univ. of Manitoba
	Columbus	SeCan Members	Winnipeg Res. Station
	Katepwa	SeCan Members	Winnipeg Res. Station
	Max	C & M Seeds, Aishling Farm Seeds	Dr. Hegge, Germany
	Roblin	SeCan Members	Winnipeg Res. Station

(continued on page 14)

Table 57. Distributors for Cereal Grain Varieties (cont.)

	Variety	Distributor <sup>1</sup>	Breeder
Winter Barley	OAC Acton	King Agro	OAC, Guelph
	OAC Elmira	W.G. Thompson & Sons Ltd.	OAC, Guelph
	OAC Halton	SeCan Members	OAC, Guelph
Winter Triticale	OAC Decade	King Agro	OAC, Guelph
	OAC Trillium	SeCan Members	OAC, Guelph
	OAC Wintri	King Agro	OAC, Guelph
Winter Wheat Soft White	Augusta	W.G. Thompson & Sons Ltd.	Michigan State Univ.
	Ena	SeCan Members	Harrow Res. Station
	Frankenmuth	King Agro	Michigan State Univ.
	Fredrick	Public	Plant Res. Centre, Ottawa
	Harus	SeCan Members	Harrow Res. Station
	Houser	W.G. Thompson & Sons Ltd.	Cornell Univ.
Hard Red	Absolvent	C & M Seeds, Aishling Farm Seeds	Dr. P. Franck, Germany
	Karat	C & M Seeds, Aishling Farm Seeds	Probsdorfer, Austria

<sup>1</sup>See Distributor Addresses in General Information section.

## PESTICIDES FOR INSECT CONTROL IN CEREALS

Table 65. Armyworm Control

Insecticide	Product per ha	Days to Harvest
Dylox 420 LC	1.5 L	21
*Lannate L 215	2.0 L	20
Sevin XLR PLUS 480 Su <sup>1</sup>	2.5-5.25 L	14

LC (Liquid Concentrate); L (Liquid); Su (Suspension).

\*Minimum period before reentry is 24 hours.

<sup>1</sup>Registered on wheat and oats. Several formulations of Sevin are available for use according to label instructions. Sevin XLR PLUS is recommended because it is less hazardous to bees. Follow precautions applying to honeybees.

Table 66. Cereal Leaf Beetle Control

Insecticide	Product per ha	Days to Harvest
Malathion 500 EC <sup>1</sup>	.55 - 1.1 L	7
*Guthion 240 SC	1.75-2.25 L	30

EC (Emulsifiable Concentrate); SC (Sprayable Concentrate).

\*Minimum period before reentry into treated areas is 48 hours.

<sup>1</sup>Less effective below 20°C.



## FIELD BEANS

**Table 67. Field Bean Variety Recommendations**

Variety	Heat Unit Rating	Yield <sup>1</sup> (t/ha)	Days to Maturity	100 seed Weight (g)	Disease Reaction <sup>2</sup>	
					Bean Common Mosaic Virus (%)	Anthracnose Delta Race
White Beans						
OAC Seaforth	2550	2.3	93	21	R	R
Mitchell	2550	2.4	94	20	R	S
Centralia	2650	2.6	94	22	R	R
Midland	2650	2.6	96	18	R	S
Rocket	2700	2.5	98	22	R	S
Wesland	2700	2.6	99	22	R	S
Stinger	2750	2.7	100	21	R	S
Dresden	2750	2.6	103	20	R	R
Fleetside	2800	2.7	103	20	R	R
OAC Rico	2800	2.7	103	20	R	R
Ex Rico 23	2800	2.7	104	21	R	S
Crestwood	2800	2.7	104	22	R	R
Yellow Eyes						
Aresteuben	2850	1.8	101	43	S	R

<sup>1</sup>Three year average except for Areteuben (1 year).

<sup>2</sup>Also see Disease and Insect Recommendations (R-Resistant, S-Susceptible).

**Table 68. Distributors for Field Bean Varieties**

Variety	Distributor <sup>1</sup>
OAC Seaforth	Public variety
Mitchell	Public variety
Centralia	Public variety
Midland	W.G. Thompson and Sons Ltd.
Rocket	W.G. Thompson and Sons Ltd.
Wesland	W.G. Thompson and Sons Ltd.
Stinger	W.G. Thompson and Sons Ltd.
Dresden	Public variety
Fleetside	Cooks, W.G. Thompson and Sons Ltd.
OAC Rico	Public variety
Ex Rico 23	Public variety
Crestwood	Cooks, W.G. Thompson and Sons Ltd.
Areteuben	Public variety

<sup>1</sup>See Distributor Addresses in General Information section.

## PESTICIDES FOR INSECT & DISEASE CONTROL IN FIELD BEANS

**Table 73. White Mold Control**

Fungicide	Product per ha
Benlate 50 W	1.7-2.25 kg
Rovral 50 W	1.0-1.5 kg
Easout 70 W	1.75-2.25 kg
Botran 75 W	3.25 kg

W (Wettable Powder).

Do NOT feed treated bean refuse to livestock.

**Table 74. Cloverworm Control**

Insecticide <sup>1</sup>	Product per ha	Days to Harvest
Thiodan 4 EC	1.5-2.0 L	2
*Guthion 240 SC	1.75-2.25 L	3

EC (Emulsifiable Concentrate); SC (Sprayable Concentrate).

\*Minimum period before reentry into treated areas is 48 hours.

<sup>1</sup>Follow precautions applying to honeybees.

**Table 75. Mexican Bean Beetle and Leafhopper Controls**

Insecticide <sup>1</sup>	Product per ha	Days to Harvest	Comments
Cygon 480 E	0.7-1.0 L	7	Do not use straw for feed or bedding.
Thiodan 4 EC	1.5-2.0 L	2	
*Guthion 240 SC	2.25 L	3	

E or EC (Emulsifiable Concentrate); SC (Sprayable Concentrate).

\*Minimum period before reentry into treated area is 48 hours.

<sup>1</sup>Follow precautions applying to honeybees.

Products may be applied as a band over the row.

**Table 76. Grasshopper Control**

Table 76 has been deleted in its entirety, as none of the insecticides listed are currently registered for grasshopper control in field beans.

## SPRING CANOLA

**Table 77. Recommended Spring Canola Varieties**

Variety	Days from Planting to Maturity	Yield <sup>1,2</sup> (t/ha)	Lodging 1 = standing 5 = flat	Distributor <sup>3</sup>
Westar	93	2.1	2.2	SeCan Members
Legend	95	2.1	2.1	Bonis & Co. Ltd.
Vanguard	95	2.2	2.1	Bonis & Co. Ltd.
Celebra	97	2.2	1.8	Bonis & Co. Ltd.
W1471	97	2.4	1.6	W.G. Thompson & Sons Ltd.
Delta	97	2.4	2.0	W.G. Thompson & Sons Ltd.
Topas	98	2.0	1.6	Bonis & Co. Ltd.
Global	100	2.2	1.5	Bonis & Co. Ltd.

### Triazine-resistant

OAC Triton	97	1.5	2.8	SeCan Members
OAC Triumph	98	1.5	1.9	SeCan Members
Stallion	98	1.7	2.0	Bonis & Co. Ltd.

<sup>1</sup> 1 t/ha = 893 lb/acre = 17.86 bu/ac.

<sup>2</sup> Values shown are averages of 15 trials over 3 years.

<sup>3</sup> See Distributor Addresses in General Information section.

## WINTER RAPESEED

**Table 83. Recommended Winter Rapeseed Varieties**

Variety	Maturity <sup>3</sup> Date (July)	Yield <sup>1,3</sup> (t/ha)	Winter <sup>2</sup> Survival (%)	Lodging <sup>2</sup> 1 = standing 5 = flat	Distributor <sup>4</sup>
Ceres	11	2.7	85	1.4	King Agro
Arabella	12	2.6	82	1.5	Agri Seed Ltd.
Tandem	13	2.6	86	1.4	King Agro
Crystal	13	2.2	83	1.6	Bonis & Co. Ltd.

<sup>1</sup> 1 t/ha = 893 lb/ac. = 17.86 bu/ac.

<sup>2</sup> Values shown for winter survival and lodging are averages of 10 trials over 3 years.

<sup>3</sup> Values shown for yield and maturity dates are averages of 11 and 8 trials, respectively, over 3 years.

<sup>4</sup> See Distributor Addresses in General Information Section.



# PESTICIDES FOR INSECT & DISEASE CONTROL IN CANOLA

**Table 81. Flea Beetle Control**

Insecticide	Product per ha	Days to harvest
Seed-furrow application:		
Counter 5G	5.5-11 kg	Planting time only
Furadan CR-10G	2.8 kg	
Postemergent spray:		
Cymbush 250 EC	140 mL	30
Ripcord 400 EC	50 mL	30
Decis 2.5 EC	200-300 mL	14
*Furadan 480 F	150-275 mL	60
*Guthion 50 WP	150-275 g	30
240 SC	275-550 mL	30
Sevin XLR PLUS 480 Su	500 mL	60

*G (Granular); F (Flowable); WP (Wettable Powder); SC (Sprayable Concentrate); EC (Emulsifiable Concentrate); Su (Suspension); CR (Special formulation for Canola Rape).*  
*\*Minimum period before reentry into treated areas is 48 hours.*

**Table 82. Diamondback Moth Control**

Insecticide <sup>1</sup>	Product per ha	Days to Harvest
Dylox 80% SP	1.5 kg	21
420 L	2.75 L	21
*Guthion 50 WP	275-550 g	30
240 SC	.55-1.25 L	30

*SP (Soluble Powder); L (Liquid); WP (Wettable Powder); SC (Sprayable Concentrate).*

<sup>1</sup>*Use Dylox if canola is in bloom because it is less hazardous to bees.*

*\*Minimum period before reentry into treated areas is 48 hours.*

## GENERAL INFORMATION ON PESTICIDES

**Table 89. Pesticide Toxicity to Bees**

### Extremely Toxic

Sevin                      Furadan

These insecticides have caused more loss (confirmed cases of poisoning) to bees than any of the other materials listed below. Growers and apiarists require close liaison where these materials are used.

**Table 89. Pesticide Toxicity to Bees (cont.)****Highly Toxic**

Ambush	diazinon	Lorsban
Cygon	Guthion	malathion
Cymbush	Imidan	Ripcord
Decis		

Severe losses may be expected if these materials are used when bees are present at treatment time or within a few days thereafter.

**Moderately Toxic**

Dylox	Lannate	Thiodan
-------	---------	---------

These can be used around bees if dosages, timing, and methods of application are correct, but should not be applied directly on bees, in the field or at the colonies.

**Relatively Non-Toxic**

All the fungicides

**Table 91. Fungicides**

Trade Name & Formulation (active ingredient)	Fungicide Classification	Days to Harvest	Relative Toxicities	Aerial Application	Distributors	Use and Remarks	Ontario Schedule
Bayleton 50WP (triadimefon)	triazole	60	Low	No	Van Waters & Rogers	hard red, soft white winter wheat	1
Benlate 50WP (benomyl)	benzimidazole	14	Low	Yes	Bartlett Niagara U.A.P. Van Waters & Rogers	field beans	3
Botran 75W (dichloran)	nitroaniline	2	Low	Yes	U.A.P.	field beans	3
Dithane M45 (mancozeb)	dithiocarbamate	40	Low	Yes	Barlett U.A.P.	spring and winter wheat	3
Easout, 70%WP (thiophanate-methyl)	benzimidazole	14	Low	Yes	Ciba-Geigy	field beans	3
Rovral, 50%WP (iprodione)	dicarboximide	14	Low	Yes	Bartlett Niagara UCO	field beans	3
Tilt 250E (propiconazole)	triazole	45	Low	No	Ciba-Geigy	wheat and spring barley	5

W or WP (Wettable Powder); E(Emulsifiable Concentrate).

<sup>1</sup> The numbers identify the Schedules in which the TRADE NAME products listed in this Table are classified under the Pesticide Act. See Table 92 for explanation of schedules.

**Table 92. Explanation of Schedules, Provincial Classification of Pesticides**

<b>Ontario Schedule</b>	<b>Explanation of Schedule</b>
Schedule 1	Restricted. Use permit only.
Schedule 2	Restricted to agriculturalists, licenced exterminators and registered custom sprayers.
Schedule 3	May be available for "Domestic" purposes if so registered.
Schedule 4	"Domestic" products only.
Schedule 5	Limited to application by an agriculturist.
Schedule 6	Similar to schedule 4 but may be registered for agricultural/ commercial use.

For further information on the regulatory aspects of the classification, please contact the Ministry of the Environment office nearest you.

**Table 93. Insecticides**

<b>Trade Name &amp; Formulation (active ingredient)</b>	<b>Insecticide Classification</b>	<b>Days to Harvest</b>	<b>Relative Toxicities</b>	<b>Aerial Application</b>	<b>Distributors</b>	<b>Use and Remarks</b>	<b>Ontario Schedule<sup>1</sup></b>
Ambush 500 EC (permethrin)	pyrethroid	Not after 5-leaf stage	Moderate	No	ICI Chipman UCO	Corn	(3)
Bactospiene ( <i>bacillus thuringiensis</i> )	Bacterial toxin	0	Low	Yes	Bartlett Niagara U.A.P.	Seed Corn	(3)
Basudin 50 W (diazinon)	organo-phosphorus	14	Moderate	Yes	Ciba-Geigy	Alfalfa, corn, field beans, peas. Toxic to bees.	(2)
Counter 15 G, 5G (terbufos)	organo-phosphorus	planting time only	Extreme	No	Cyanamid	Corn, Canola	(5)
Cygard 15-G (terbufos + phorate)	organo-phosphorus	planting time only	Extreme	No	Cyanamid	Corn	(5)
Cygon 480 E (dimethoate)	organo-phosphorus	2 Alfalfa 7 Beans	Moderate	Yes	Bartlett ICI Chipman Niagara Cyanamid UCO	Alfalfa, field beans. Toxic to bees.	(2)
Cymbush 250 EC (cypermethrin)	pyrethroid	30 Canola 5 Corn	Moderate	No	ICI Chipman UCO	Corn, Canola	(2)
Decis 2.5 EC (deltamethrin)	pyrethroid	14	Moderate	No	Niagara	Canola	(2)
Dipel SC ( <i>Bacillus thuringiensis</i> )	Bacterial toxin	0	Low	Yes	Niagara	Timothy	(3)
Di-Syston 15 G, 720 LC (disulfoton)	organo-phosphorus	planting time only	Extreme	No	Niagara U.A.P. Van Waters & Rogers	Corn	(5)



**Table 93. Insecticides (cont.)**

Trade Name & Formulation (active ingredient)	Insecticide Classification	Days to Harvest	Relative Toxicities	Aerial Application	Distributors	Use and Remarks	Ontario Schedule <sup>1</sup>
Dyfonate 20 G (fonofos)	organo-phosphorus	planting time only	Extreme	No	ICI Chipman UCO, U.A.P. Cargill	Corn	(5)
Dylox 80% SP, 420 Liquid (trichlorfon)	organo-phosphorus	21	Low	Yes	Niagara	Canola, cereals. Relatively safe to bees.	(3)
Furadan 10 G, CR-10 G, 480 F (carbofuran)	carbamate	planting time only 7	Extreme	Yes Permit Required	Bartlett Niagara UCO U.A.P. Van Waters & Rogers	Corn, Canola, Alfalfa. Toxic to bees.	(2) (Granular) (5) (Flowable)
Guthion 240 SC (azinphos-methyl)	organo-phosphorus	3 Beans 21 Alfalfa 30 Grain	Extreme	Yes Permit Required	Bartlett Niagara U.A.P.	Field beans, soybeans. Toxic to bees.	(5)
Imidan 50 WP (phosmet)	organo-phosphorus	7	Moderate	Yes	Bartlett ICI Chipman	Alfalfa. Toxic to bees.	(3)
Lannate L. (methomyl)	carbamate	21	Extreme	Yes	Niagara U.A.P. Van Waters & Rogers	Grain	(2)
Lorsban 4 E, 15 G (chlorpyrifos)	organo-phosphorus	70	Moderate	Yes Permit Required	U.A.P.	Corn	(2),(3)
Malathion 500 EC, 25 W (malathion)	organo-phosphorus	7	Low	Yes	Bartlett Niagara U.A.P. UCO	Alfalfa, grain crops, field beans soybeans. Toxic to bees. Less effective below 16°C	(3)
Ripcord 400 EC (cypermethrin)	pyrethroid	30	Moderate	No	Ciba-Geigy	Canola Corn	(2)
Sevin XLR PLUS 480 Su (carbaryl)	carbamate	5 Beans 2 Alfalfa 14 Cereals	Moderate	Yes	Niagara UCO	Alfalfa, cereals beans, corn canola	(3)
Thimet 15 G (phorate)	organo-phosphorus	planting time only	Extreme	No	Cyanamid	Corn	(2)
Thiodan 4 EC (endosulfan)	organo-chlorine	2	Moderate	Yes	Niagara U.A.P., UCO	Field beans, soybeans. Toxic to bees.	(2)

*(continued on page 22)*

**Table 93. Insecticides (Cont.)**

Trade Name & Formulation (active ingredient)	Insecticide Classification	Days to Harvest	Relative Toxicities	Aerial Application	Distributors	Use and Remarks	Ontario Schedule <sup>1</sup>
Thuricide HPC ( <i>Bacillus thuringiensis</i> )	Bacterial toxin	0	Low	Yes	Sandoz	Timothy	(3)

<sup>1</sup>The numbers identify the Schedules in which the TRADE NAME products listed in this Table are classified under the Pesticides Act. See Table 92 for explanation of schedules.

**Table 94. Distributors of Pesticides Recommended in Publication 296**

Bartlett Inc. 931 Bartlett Road Beamsville, Ont. L0R 1B0	416-563-8261	Sandoz Agro Canada Inc. Suite 302, Plaza 4 2000 Argentina Rd. Mississauga, Ont. L5N 1W1	416-821-7850
ICI Chipman 400 Jones Road, P.O. Box 9910 Stoney Creek, Ont. L8G 3Z1	416-643-4123	United Agri Products (U.A.P.) 1 Wilton Grove Rd. P.O. Box 22116 London, Ont. N6C 4N0	519-681-2173
Ciba-Geigy Can. Ltd. Agricultural Division 6860 Century Avenue Mississauga, Ont. L5N 2W5	519-623-7600	United Cooperatives of Ontario P.O. Box 527, Station A Mississauga, Ont. L5A 3A4	416-270-3560
Cyanamid Canada Inc. 88 McNabb St. Markham, Ont. L3R 6E6	416-470-3600	Van Waters & Rogers 1020 Hargrieve Road, Unit D London, Ont. N6E 1P5	519-668-3007
Niagara, Business Unit of Rhone-Poulenc Canada Inc. 555 Southgate Dr. Guelph, Ont. N1H 6J3	519-767-1000		

## GENERAL INFORMATION

### DISTRIBUTORS OF VARIETIES RECOMMENDED IN PUBLICATION 296

Agri Seed Ltd. Box 1415, Chatham, Ontario N7M 5W8	519-354-7251	Northrup Kings Seeds Limited 1250 Franklin Boulevard, Box 1207 Cambridge, Ontario N1R 6C9	519-621-0890
Aishling Farm Seeds R.R. #2, Baltimore, Ontario K0K 1C0	416-372-5359	Oseco Inc. P.O. Box 219, Brampton, Ontario L6V 2L2	416-846-5080
Allelix Inc. 6850 Goreway Drive, Mississauga, Ontario L4V 1P1	416-677-0831	Heritage Seeds 75 Cardigan Street, Guelph, Ont. N1H 3Z7	519-822-4800
Bishop Farm Seeds Limited Box 338, Belleville, Ontario K8N 5A5	613-968-5533	Otto Pick & Sons Seeds Limited (Pickseed) Box 126, Richmond Hill, Ontario L4C 4X9	416-884-1147
Bonis & Co. Ltd. P.O. Box 217, Lindsay, Ontario K9V 5Z4	705-324-0544	Parsons Seeds Ltd. P.O. Box 280, Beeton, Ontario L0G 1A0	416-729-2202
C & M Seeds R.R. #3, Palmerston, Ontario N0G 2P0	519-343-2126	Pioneer Hi-Bred Limited Box 730, Chatham, Ontario N7M 5L1	519-352-6350
Cargill Hybrid Seeds Box 490, Princeton, Ontario N0J 1V0	519-458-4336	Pride Brand Seeds P.O. Box 1088, Chatham, Ontario N7M 5L6	519-354-3210
Dekalb Canada Inc. Box 430, Chatham, Ontario N7M 5K5	519-352-5310	Rothwell Seeds Limited Box 511, Lindsay, Ontario K9V 4L9	705-324-9591
First Line Seeds R.R. #2, Guelph, Ontario N1H 6H8	519-821-0882	SeCan Association* Suite 512, 885 Meadowlands Drive Ottawa, Ontario K2C 3N2	613-225-6891
Funk Seeds Ciba-Geigy Canada Limited R.R. #3, Cottam, Ontario N0R 1B0	519-839-4851	Speare Seeds Limited P.O. Box 171, Harriston, Ontario N0G 1Z0	519-338-3840
Jacques Canada Limited P.O. Box 598, Niagara Falls, Ontario L2E 6V2	1-800-843-5362	Tib Szego Associates Limited P.O. Box 366, Lindsay, Ontario K9V 4S3	705-324-0042
King Agro P.O. Box 1088, Chatham, Ontario N7M 5L6	519-354-3210	United Cooperatives of Ontario 151 City Centre Drive Mississauga, Ontario L5A 3A4	416-270-3560
Labonté Seeds Limited Box 1660, New Liskeard, Ontario P0J 1P0	705-647-6821	W.G. Thompson & Sons Limited Box 250, Blenheim, Ontario N0P 1A0	519-676-5411
Mapleseed Inc. Oakwood, Ontario K0M 2M0	705-786-2020		

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